



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ON THE LARVÆ OF CERTAIN SAW-FLIES (TENTHREDINIDÆ.)

BY HARRISON G. DYAR, PH. D.

Trichiosoma crassum Kirby.

Mr. MacGillivray has sorted out my bred material into two species of *Trichiosoma*, *T. triangulum* and *T. crassum*. There was no corresponding difference in the larvæ, however, and, therefore, that of *T. crassum* may be described as being indistinguishable from that of *T. triangulum*. (See Ent. News, vi, 199.)

Food-plants.—Willow, poplar, wild cherry and alder.

Hylotoma scapularis Klug.

The flies mentioned in Can. Ent., xxvii, 344, under label 2B were pronounced by Mr. MacGillivray to be males of this species. The following is the present state of this confusing subject :

Larvæ head black or red.

No paler subdorsal line.

Tubercles distinctly black.

Head red, body yellow ; on birchV.

Head black, rarely reddish, body yellow ; on wild cherry.....S.

Tubercles blackish only, or pale in black rings.

Head blue black, body yellow ; on oak2B

A pale yellow subdorsal line.

Head red or black, body greenish-yellow ; on willow2C

Head pale testaceous with vertical dark band.

Body green, tubercles nearly all pale.....2L

Here are five rather distinct types of larvæ. From V have been bred *H. pectoralis*, *H. scapularis* ♀ and *H. cæruleus* ♂ ; from S has been bred *H. mcleayi* ; from 2B *H. scapularis* ♂ ; larvæ 2C were bred from eggs laid by a female *H. clavicornis* ; 2L produces *H. mcleayi* ♂ and *H. virescens* (*clavicornis*) ♀.

Description of larvæ 2B. Four last stages observed with widths of head .8, 1.1, 1.8 and 2.5 mm. Head rounded, uniform blue-black, the sutures scarcely visible ; small black setæ in front. Body cylindrical, subventral ridge prominent ; thoracic feet large, pale yellowish brown, the large basal joint blue-black. Abdominal feet on joints 6 to 10 and 13 small, the last pair rudimentary, pale at tip, their bases dotted with black. Segments coarsely 3-annulated with nine large (.35 mm.) setiferous tubercles in an approximate square, the lower posterior one moved inward ; another behind the spiracle ; these tubercles are black-

ish or yellow, edged with black. Subventral ridges oblique, prominent, pale, but margined with black and bearing many setæ. Anal plate obscure, blackish. Between the setæ are numerous small black dots bearing still more minute setæ. A row of four ventral setiferous black spots on each segment anterior to the legs and six medio-ventral segmentary round orange spots posterior to the feet on joints 6 to 10. Forms a reticular cocoon of yellow silk.

Macrophya bilineata *MacGillivray*.

Head whitish, eye black, a large black patch on vertex, neat, almost pyriform. Body segments 7-annulated with minute black setæ on the second and fourth annulets. Body tapering a little posteriorly, straight or curled spirally, feet on joints 6 to 13. Whitish, translucent, not shining, appearing green from the food except subventrally; a faint black lateral shade bounding the apparently green area; a single small sooty black suranal spot. Tracheæ distinct; thoracic feet clear with brown tips. Width of head 1.8 mm.

Ultimate stage.—Annulate, slightly shining, all immaculate, waxy, whitish emerald green. Head slightly testaceous, eye black, no marks. Enters the ground.

Food-plants.—*Viburnum opulus* and *V. cassinoides*.

Macrophya mixta *MacGillivray*.

Head reddish on vertex, eye black, no marks; width 1.8 mm. Body waxy greenish, 7-annulate, no marks. Another example had a dusky lateral shade defining the dorsal color which appears darker than the subventral region on account of the food showing by transparency. Ultimate stage like the preceding species.

Food-plant.—*Viburnum opulus*.

These two species of *Macrophya* occurred together and only one example of each was bred. I suspect that they are not specifically distinct.

Tenthredo remota *MacGillivray*.

Resembles *T. cressoni*, but less yellowish green, the skin being colorless and only green from the food; no subdorsal band of fat, at most only a few scattered granules. Widths of head observed .6, .8, 1.4, 1.8, 2.2 mm.

The egg forms a regular elliptical swelling near the middle of a leaf, 2 x 1.5 mm., under the lower epidermis, the saw-cut on the upper side.

Larva.—Head large, prominent, with grooves before the vertices

of the lobes; pale below, orange above, shining, eye black, no marks. Joint 2 small, the body only slightly tapering; feet on joints 6 to 13. Whitish translucent, not shining, food green the whole length, plainly visible. Thorax scarcely enlarged; segments finely and neatly 7-annulate, the incisures more distinct, slightly folded. Under a lens white points are present on the second and fourth annulets. No marks; thoracic feet colorless. Tracheal line not very distinct.

Ultimate stage.—Head shining whitish testaceous, eye black; body shining, pale clear honey yellow, rather whitish, somewhat opaque, neatly annulate; no marks.

Food-plant.—Yellow birch.

Taxonus dubitatus Norton.

Stage before last.—Head pale yellowish, a trace of brownish from minute dottings; a very small brown dot in apex of clypeus and behind eye, eye in a black spot. Body sordid waxy, green from food, anal end dark; segments 7-annulate, first and second annulets largest. No marks except the small black spiracles, antennæ, palpi, jaws and claws of thoracic feet.

Last stage.—Head pale brownish, a big black patch behind the eye. Body without marks except a large black subdorsal patch on joint 13 anterior to the anal flap; green from food, faintly yellowish, paler subventrally. Others have more spots on the head.

Foad-plant.—*Onoclea*, sp. Occurred around New York City.

Taxonus albidopictus Norton.

Head shining pale brownish, a large triangular black patch on the vertex connects with a like one on the clypeus; another patch at its apex on the black eye reaching back to the occiput; these three patches have diffuse edges and the vertical and lateral ones are connected by a dark cloud; mouth brown; width 1.2 mm. Feet on joints 6 to 13; segments 7-annulate, rather unequal, annulet 2 large; slightly shining, smooth; dorsum to spiracles dark green, under the lens obscurely longitudinally streaked and divided by the pale dorsal vessel, especially on the thorax; on joint 13 a large round smoky black lateral patch; joint 2 anteriorly, subventral region and feet translucent whitish, thoracic feet black marked; spiracles black, tracheal line white. Bored in wood. Found on *Onoclea sensibilis* at Rouse's Point, N. Y.

Mr. MacGillivray remarks "this differs from the description (of Norton) in having more of black on the base of the abdomen and in having the apex of the posterior femora whitish. Judging from Pro-

vancher's description it is undoubtedly *albidopictus*." The larvæ of these two species of *Taxonus* cannot be certainly distinguished.

Harpiphorus tarsatus Say.

Eggs.—Laid under the lower epidermis, sawed through from above; close to the midrib in a long line, the cuts united; one edge of the swelling is on the midrib or large vein, the other parallel to it but wavy, composed of the numerous saw cuts; width 1 mm.; length 4 to 30 mm., according to the number of eggs laid; punctures .8 mm. apart.

Stage I.—Nearly colorless, head with a smoky tint especially in a shade upward from the black eye; width .5 mm.

Stage II.—Head brownish, a shade upward from the black eye; width .6 mm. Body all subtranslucent white, no marks; food green in thorax, more yellowish posteriorly; segments finely annulate. Body shape much as in the mature form; length 4.5 mm.

Stage III.—Head dark blackish brown, eye black; width .8 mm. Body without marks.

Stage IV.—Head brownish, a darker shade on the outer sides of the lobes; width 1.0 mm. Body whitish, the food green, anal plate brownish, feet colorless.

Stage V.—Head shining black; width 1.2 mm. Joint 2 anteriorly, subventral region and feet pale yellow; dorsum sordid pale olivaceous without marks, slightly shining; annulations obscure; anal plate dark. Length 12 mm.

Stage VI.—Head shining black; width 1.6 mm. Joint 2 and subventral region pale yellow; dorsum with a blackish rectangle on each segment on a whitish ground, the rest of the dorsum colored nearly like the sides. Later the coloration is more like the next stage.

Stage VII.—Like the next stage, but the marks a little fainter; with of head 2 mm.

Stage VIII.—Head small in proportion, lower than joint 2, all black, slightly shining, width 2.5 mm. Joint 2 anteriorly, subventral region, venter and feet orange yellow; dorsum to spiracles olivaceous black, annulet 2 in the middle and whole of annulet 4 to the subventral color pale greenish gray, both interrupted by the olivaceous dorsal vessel. Segments 6-annulate, the second and fourth with minute setæ. Anal plate black, darker than the dorsal marks. Thoracic feet spreading, pale yellow, not very large; abdominal feet all well developed. Body large at joint 2, gradually tapering posteriorly, rapidly at the end of joint 13. Length about 25 mm., width 4 mm. The pale dorsal bands

contain fat granules. In some examples they are broad and the dark markings diffuse and pale. No bloom or white down.

Stage IX.—(Ultimate.) Exactly as in the last stage except that the dorsal pale annulets are light blue instead of greenish gray, the black is bluish rather than olivaceous and the skin is very slightly more shiny. Head 2.5 mm. The larvæ bore in wood to pupate.

Food-plant—Dogwood (*Cornus alternifolia*).

Harpiphorus varianus Norton.

Described by me (Can. Ent., xxvii, 196) as *H. tarsatus*. The flies of these two species are occasionally alike in color, as Mr. Harrington indicates, but Mr. MacGillivray has separated them by the structure of the female saw-guide and saw. The larvæ are abundantly distinct.

Harpiphorus versicolor Norton.

Eggs.—About three laid side by side under the lower epidermis from above; a short row nearly parallel to a side vein; $1.5 \times .6$ mm., swelling the leaf; faintly yellowish with a green central area.

Stage I.—Head pale brown, eye black; width .33 mm. Body curled, whitish, rather opaque, without bloom. Food green in the slightly enlarged thorax.

Stage II.—Head pale brownish, darker over the vertex; width .5 mm. Body annulate, colorless or greenish from food, mealy white.

Stage III.—Head black, mealy only in a band across between the eyes; width .8 mm. Body yellow, well covered with the white mealy secretion.

Stage IV.—The same. Width of head 1.1 mm.

Stage V.—Width of head 1.5 mm.

Stage VI.—Head black, slightly mealy except the eye and mouth; width 2.1 mm. Body coarsely 6-annulate, mealy or short woolly to and including the subventral folds; no marks whatever; feet on joints 6 to 13. Thorax slightly enlarged.

Differs at once from *H. varianus*, in being without the black anal plate.

Stage VII.—(Ultimate.) Head black, yellow below the eyes, no bloom; width 1.5 or 2.1 mm. Body shining, the subventral folds and venter ocher yellow, dorsum blue gray, marked with leaden black on annulets 1, 3, 5 and 6 subdorsally and on all the annulets laterally, leaving a dorsal and a subdorsal line of the ground color connected on annulets 2 and 4. The lower end of this dorsal color is incised before the spiracle by the upper yellow subventral fold. Feet all pale; bores in wood. Found on *Cornus* at Greenwood Lake, N. J.

The following species have been named by Mr. C. L. Marlatt:

Schizocerus prunivorus *Marlatt*.

Egg.—In a pyriform slit under the lower epidermis at the middle of one edge of the leaf; laid singly. The larva hatches and eats a curious winding slit down into the leaf; later this reaches the edge.

Stage I.—Head pale greenish testaceous, eye black; width .4 mm. Body segments well marked, the incisures more perpendicular in front than behind, faintly 3-annulate. Translucent with a greenish tint; alimentary canal visible. Thoracic feet large, colorless with black shades at their bases; abdominal ones very small on joints, 6 to 11 and 13, colorless; joint 13 slightly bulging, with very small anal prongs.

Stage II.—The same; head green, width .6 mm.

Stage III.—Head .75 mm. All leaf green, blackish shades at the bases of the abdominal feet, eye black, mouth brown. Large suranal prongs green and a smaller more approximate subanal pair. Joint 13 a little enlarged. On joints 5 to 13 a series of small, colorless, eversible lateral glands. Abdominal feet rudimentary.

Stage IV.—Head 1.15 mm. All leaf green, a little brownish at the vertex, eye black. Body leaf green, shining, 3-annulate, food darker. Thoracic feet clear with a blackish cloud at base; abdominal ones rudimentary. Six anal prongs; a small pair at end of plate, a large lateral pair, reddish tinted and the small subanal pair. Lateral glands situated substigmataally, posterior. Subventral ridge distinct; tracheal line fine.

Stage V.—Head pale green, thickly brown dotted, eye black; width 1.4 mm. Body green, faintly 3-annulate, slightly blotched with yellowish subventrally; a black subventral shade on the thorax in spots at the bases of the feet which are green, clearer at tip. Subventral ridge fluted, glands small; the four suranal prongs brownish, subanal pair green. Tracheal line distinct; spiracles dark; no marks. Cocoon in the ground, reticular, of yellow silk.

Found on *Prunus pennsylvanica* and *Amelanchier canadensis* at Jefferson Highlands, N. H., and on *Prunus serotina* at Bellport, Long Island, N. Y.

Camponiscus americana *Marlatt*.

Head pale brown, shining, eye black; width 1.5 mm. Thorax enlarged, the feet spreading, pale; abdominal ones on joints 6 to 11 and 13. Segments indistinctly annulate, incisures well marked, folded. Whitish, not shining, the food makes the dorsum to spiracles green, the

posterior end of alimentary canal forms a blackish shade which looks like a mark at first glance. Thorax higher than head. Sits flat on the venter, usually curled spirally when at rest. Five stages were observed, but not consecutively.

Found on the poplar at Plattsburgh, N. Y., and at Jefferson Highlands, N. H.

Pontania populi Marlatt.

This is evidently what Mr. Marlatt had in mind when he said of the habits of the larvæ of *Pontania*, "at least one America species develops in the rolled or folded edge of the leaf."* The present species forms at first a small gall, but soon the leaf rolls over, gall and all, forming two or three turns and the larva lives in the tube so formed, without spinning any sort of web.

There are probably five larval stages. The larva remains in the gall up to as late as the fourth stage, but is usually out to feed in the third. It may be in the rolled part permanently in stage IV.

Gall.—A low irregular swelling on the upper side of the leaf, the nearest veins enlarged and tending to curve backward, rolling the leaf with the back side inward. Under side of gall thin, flat or irregularly rugose; above scarcely much thickened but folded up. Green or yellowish, an ill-defined swelling about 5 mm. in diameter, concealed in the rolled leaf.

Stage II.—(In gall.) Head pale brown, paler over the clypeus; body shining whitish; width of head .36 mm.

Stage III.—Head pale brown above clypeus; width .55 mm. Body annulate, shining, no marks; anal prongs dark.

Stage IV.—Head very pale brown; width .7 mm. Body colorless.

Stage V.—(In leaf.) Head all pale brown; width 1.0 mm. Body segments 3-annulate, whitish, scarcely shining, food green; two dusky brown corneous patches precede the dark tipped anal prongs.

The larvæ never eat the whole leaf, but the parenchyma only, even in the last stage. They spin small brown cocoons.

Found on *Populus grandidentata* at Fort Lee, N. J. There is more than one brood in the season, the larvæ infesting the successive leaves of young shoots.

Pontania terminalis Marlatt.

Allied to the preceding. Egg deposited under the lower epidermis forming a small gall-like swelling of the type of *P. populi*, but less pro-

* U. S. Dept. Agriculture, technical series, No. 3, 1896, p. 8.

nounced. A green elevation of the upper surface; below a thin skin, not swollen, but slightly yellowish; the leaf rolls over tightly in a close coil to two whole turns, finally as far as the midrib, from one half to the whole of one side of the leaf being involved. The little larva lives in the gall, but soon comes out of it and rests in the rolled part.

Stage II.—Head pale brownish, the eye black; width .3 mm. Body all whitish, food forming a narrow green line; slightly shining, annulated, thoracic feet of good size.

Stage III.—Head and anal flap shining black; width .4 mm. Body whitish, slightly shining, annulate.

Stage IV.—Head shining black; width .55 mm. Body shining, no distinct setæ, irregularly 4- to 5-annulate; feet on joints 6 to 11 and 13. Body whitish, slightly opaque, food green; the whole of anal flap black; anal prongs short, black.

Stage V.—Head pale in the sutures, a large black patch on each lobe and one in the clypeus; width .8 mm. Body 3-annulate, smooth, not shining, whitish with a slight yellow-green tint, food green; anal end concolorous, no patch at all, though the frass gives a dusky shade. Prongs very short, brown tipped. The larvæ eat the parenchyma only, as in the preceding species.

Found on willow at Van Cortlandt Park, New York City.

***Pteronus dyari* Marlatt.**

I supposed this species to have been bred from the same larvæ which produced *Amauronematus luteotergum* (Trans. Am. Ent. Soc., xxii, 304), but Mr. Marlatt finds the flies distinct. Further observations are needed.

***Pteronus hyalinus* Marlatt.**

I have described the larvæ as *Nematus lateralis* (Trans. Am. Ent. Soc., xxii, 307).

***Pteronus lombardæ* Marlatt.**

Larvæ indistinguishable from those of *P. ventralis*, feeding on poplar instead of willow (Trans. Am. Ent. Soc., xxii, 305).

***Pteronus populi* Marlatt.**

Indistinguishable from *P. hudsonii* Dyar in coloration in the last stage.

Egg.—In a cluster of saw cuts close together, but irregular, under the lower epidermis at the apex of a leaf.

Stage I.—Head .6 mm. Larvæ all blackish. Gregarious, eating holes in the leaf.

Stage II.—Head, calculated, .75 mm. All blackish.

Stage III.—Head 1.2 mm., shining black. Body black, immaculate at first; later, in some, faint yellow lateral spots as in *P. ventralis*.

Stage IV.—Head black, width 1.6 mm. Body greenish, tubercles and streaks on the annulets slaty black, not entirely confluent, leaving some of the green ground color especially dorsally and laterally; orange spots distinct; feet colorless.

The males spin at the end of this stage, or at least with this coloration and width of head.

Stage V.—Head 2.2 mm. Coloration as described for *P. hudsonii* (see Trans. Am. Ent. Soc., xxii, 306). Anal prongs short, black tipped.

Found on *Populus grandidentata* at Jefferson Highlands, N. H. Apparently the same larva also on willow at Greenwood Lake, N. J., and received from Mrs. Slosson from Franconia, N. H. There is more than one brood in the year.

***Pteronus ostryæ* Marlatt.**

Head 1.6 mm, pale testaceous, a black patch at the vertex, eye black. Body all green, tar brown on the folds, annulate, not shining, no marks, no setæ.

This larva fell to the ground while I was examining a hop hornbean tree. It was ready to spin and I have not observed it feeding or in the appropriate coloration.

***Amauronematus oregonensis* Marlatt.**

Whitish green, pilose, solitary on woolly willow at Keene Valley, N. Y., and Jefferson Highlands, N. H. It has just the appearance of the back of the leaf.

Whitish green, a white addorsal and stigmal line, produced by the edges of the dorsal vessel and the tracheal line, supplemented by a few white granules under the skin laterally. Segments 3-annulate, with concolorous warts on each annulet, bearing short white pile. Feet on joints 6 to 11 and 13. Thoracic feet colorless outwardly, greenish at base. Head same color as body, eye and mouth black; width 1.2 to 1.4 mm.

Ultimate Stage.—Head shaded with pale blackish, eye black; width as before. Body greenish paraffin color, shaded with black on the three annulets except for a central subdorsal space on each, in a narrow dorsal line and in stigmal spots, and spots on the subventral folds. No setæ, the dark spots representing the warts. Feet colorless.

Both now and in the previous stage (except for the hairs) very like the following species.

This or the following larva is described by Dr. Packard in the 5th Report, U. S. Entomological Commission as "unknown saw fly larva" on page 589, number 72 of willow insects.

***Amauronematus similis* Marlatt.**

Straight, solitary on woolly willow at Plattsburgh and Keene Valley, N. Y., and Jefferson Highlands, N. H.

Abdominal feet on joints 6 to 11, very slight on 13. Head whitish, a little mottled with green, not shining; width 1.4 mm., eye and mouth black. Body a little flattened, subventral region rather prominent, the posterior segments slightly tapering. Color soft leaf-green, not yellowish, not shining; a distinct white subdorsal line, the pair approaching and nearly touching on joint 13; the line sends down a mottled white streak on all the annulets as far as the tracheal line, sometimes separated, forming a lateral line of streaks. A few obscure white dots ventrally. The white bands and streaks are composed of white granules below the skin. Feet pale, thoracic ones clear. Segments not very distinctly 6-annulate, no tubercles; spiracles minute, brown.

The larvæ feed resting on the edge of the leaf. In some examples there are small black dots on the thorax and subventrally on the abdomen.

Ultimate Stage.—Slightly shining, light green, translucent like ground glass, uniform. Segments 6-annulate, the second and third larger than the others. Dorsal vessel a shade darker, its sides showing faintly whitish; tracheal line narrow, thread-like.

Later the larva is shaded with blackish on all the annulets and the top of the head; bores in soft or decayed wood to pupate.

***Amauronematus dyari* Marlatt.**

Larvæ described by me (Can. Ent., xxvi, 187) as *Nematus monochroma*; later determined by Mr. Marlatt as *N. brunneus* (Can. Ent., xxvii, 342). The final decision makes it a new species.

***Amauronematus azaliæ* Marlatt.**

Solitary edge-eaters on *Azalea*; found at Jefferson, N. H., in June. The larvæ all disappear before the end of June, and there is only one brood in the year.

Head a pale green, finely brown-dotted except a narrow space bordering the brown clypeus; eye black; width 1.2 mm. Segments irre-

gularly and faintly 5-annulate; shining green, the dorsal vessel dark, the tracheal line evident; no marks except little dusky rings subventrally defining the obsolete tubercles, which can also just be distinguished dorsally with a lens, though perfectly concolorous. Anal prongs very short, remote, obscurely black-tipped. Setæ very fine and short. Thoracic feet clear with brown claws.

The larvæ became streaked with dusky blackish on the annulets, bringing out the tubercles more distinctly and entered the ground to spin.

Hemichroa laricis *Marlatt*.

Head pale brown, dotted, eye black; a pale arcuate line over the clypeus: width 1.4 mm. Body segments 5-annulate, the last two annulets folded; feet on joints 6 to 11 and 13. Body green, shaded with opaque pale green pigment subdorsally and broadly stigmatally, leaving more translucent dorsal and lateral straight lines and small irregular areas among the subventral folds. The bright green fat granules composing the pigment are aggregated along the dorsal vessel, tracheal line and subventrally. Feet concolorous, the thoracic clear with brown claws. Tracheal line straight, white. The larvæ are solitary and rest on a needle of the food plant with the head toward the twig. They are very difficult to distinguish in this position, since the brown head harmonizes with the bark and the green-striped body with the leaves. Found on the larch at Jefferson Highlands, N. H.

This larva is described by Dr. Packard in Fifth Report United States Entomological Commission as "*Selandria* (?) sp.," on page 901, number 26 of larch insects.

Pachynematus affinis *Marlatt*.

Feet on joints 6 to 11, none on joint 13. Body segments 6-annulate, the last two annulets small and folded, whitish. Tubercles on the second and fourth annulets. Head pale greenish with a bright testaceous tint by transparency, eye black, jaws brown; width 1.8 mm. Body pale green with a distinct, straight, rather broad white stigmatal line on joints 5 to 12, lost posteriorly in a whitish shade which covers joints 12 and 13; the edges of the dorsal vessel form a distinct white geminate line on joints 3 to 11, pulsating, lost in the white tint posteriorly. A blackish green subdorsal band on thorax, also on the abdomen, but of varying distinctness. Tubercles small, concolorous and obscure, setæ rudimentary, dark, situated in two transverse rows, on the second and fourth annulets, and thickly on the subventral folds. Abdominal feet green; thoracic clear with brown tips.

Swept from grass at Jefferson, N. H.; also on grass by Mr. L. H. Joutel at Greenwood Lake, N. J.

***Pachynematus pubescens* Marlatt.**

Head round, shining, testaceous, eye black; width 1.3 mm. Body pale pinkish brown, a broad addorsal and stigmatal white band. The former borders the dorsal vessel and the pair are separated by the dark blood; the latter is edged above by a blackish shade. All the lines run from joint 2, but are lost on joint 13, the frass showing as a dark shade. Body slightly shining; segments indistinctly 5-annulate; feet concolorous.

Found on *Carex* near the summit of Mt. Washington by Mrs. Zella Dyar.

***Pachynematus gregarious* Marlatt.**

Eggs.—Laid in an irregular group of slits under the lower epidermis toward the center of a leaf. The slits are close together and after the larvæ emerge remain as irregularly placed, lunate, hollow ridges, elliptical when fresh; 1 x .5 mm.

Stage I.—Head blackish brown; width .35 mm. Body colorless.

Stage II.—Head pale with a black shade across the clypeus and on each side nearly to the vertex. Body shining, colorless; the lateral outline fluted, food green; sides of thorax bulging; tail often elevated. Thoracic feet dusky and the sides of the thorax dusky spotted.

Stage III.—Head .5 mm. Much as in the next stages, but the black parts brownish and shaded.

Stage IV.—Head .8 mm. As in the next stage, but the black more diffuse. The black marks on the body are small, but the elevations are present. Thorax enlarged, fluted.

Stage V.—Head 1.0 mm., rounded, tinted with pale testaceous, almost colorless except for a broad deep black band which runs transversely across the clypeus over the eyes and turns up posteriorly to the vertex, becoming smoky; mouth brown. Feet on joints 6 to 11, none on joint 12 and scarcely a trace on joint 13, yet the larvæ sit flat on the venter on the surface of the leaf. Thorax a little enlarged; abdomen slightly tapering, smallest posteriorly. Segments obscurely 4-annulate, the first annulet broad; pale, whitish, tinged with yellow, translucent, the alimentary canal showing green. On the abdomen on joints 5 to 11 a row of large round elevated black patches stigmataly and another above the bases of the feet, a little anterior to the middle of the segments. On joint 12 the spots are smaller, absent on joint 13. On thorax a small lateral spot and a large one above the base of each leg.

Body shining; tracheæ evident where not obscured by the large spots. Thoracic feet marked with brown; abdominal ones short, colorless. There are six colorless, eversible, ventral glands on joints 6 to 11.

Stage VI.—(Ultimate.) Head pale, the marks dusky clouded; a patch over eye and streak on vertex. Body whitish, the black marks supplemented by a series of black streaks on the annulets, diffusely spreading over the dorsum. The body is scarcely shiny and does not appear sticky. Width of head .8 or 1 mm.

Found on the willow at Jefferson, N. H., and Englewood, N. J.

These larvæ are gregarious, with all the appearances of slugs, though they are really not sticky as they look, but only very shiny. The number of feet and the ventral glands shows them to belong to the Nematinæ, although from general appearance one would suppose them to be some species of *Eriocampa* or *Monostegia*.

I was much surprised that the flies should belong to *Pachynematus*. The other larvæ of this genus are solitary grass feeders, whereas a larva very similar to this species is described as that of a species of *Pristiphora*.*

TENACITY OF LIFE IN ADULTS OF CRYPTORHYNCHUS LAPATHI.

BY F. M. WEBSTER.

On August 24th, by invitation of Mr. Ottomar Reinecke, I visited the locality near Buffalo, N. Y., locally known as Beer Creek, where my friend had only a short time before discovered this species. We arrived on the ground about 3 p. m., leaving about 5 p. m., and during that time I was fortunate enough to capture eighteen specimens. These were placed in a small collecting bottle, heavily charged with cyanide of potassium, and had been prepared only a few days before. I had put in so much of the cyanide of potassium that it soon discolored the plaster parts in which it was embedded and collected so much moisture that my bottle was hardly fit for use. The specimens were placed in this bottle as collected, and remained therein until after 11:30 p. m., or from six to seven hours, when they were removed and placed in a small tight tin box. The following morning they were examined, but gave no signs of life. On returning home and opening the box, on August 29th, not only were nearly all alive, but several were found in copulation!

* *P. murtfeldtiæ* Marlatt. "A smooth greenish slug with black head, feeding on black willow." Tech. ser. 3, U. S. Dept. Agr., p. 117.